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ABSTRACT

Challenge initiatives are used by many mental health agencies to facilitate a variety of therapeutic changes within participants. There are several ways to lead these challenge initiatives, including whole training, fixed training, and adaptive training. This paper presents a theoretical basis for considering adaptive training to be the most effective facilitation technique in a mental health setting for increasing adolescents' self-efficacy and self-affirmation. In contrast to whole training, which focuses on practicing tasks in their total completed form, and fixed training, which has an inflexible progression for the trainee to follow, adaptive training varies the task or problem as a function of how well the trainee performs. Using supportive citations from the literature, the interrelationships of performance, self-efficacy, and self-affirmation to adaptive training are explained. Using adaptive training in challenge initiatives allows the therapist to correlate intervention structure with a client's readiness for treatment. Contains 37 references. (Author/SAS)

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ADAPTIVE TRAINING'S AFFECT ON SELF-PERCEPTION

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ABSTRACT

Challenge initiatives are used by many agencies to facilitate a variety of therapeutic changes within participants. There are several ways to lead these challenge initiatives. This paper presents a theoretical basis for why adaptive training may be the most effective facilitation technique for increasing adolescents' self-efficacy, self-affirmation, and performance. The nature of adaptive training creates an environment condusive for successful performance accomplishments. These successful accomplishments are one of the main ways in which self-efficacy and self-affirmation may be enhanced.

Author's Note:

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ADAPTIVE TRAINING'S AFFECT ON SELF-PERCEPTION

In increasing numbers, therapists in mental health agencies are using challenge initiatives to facilitate the acquisition of a variety of therapeutic changes in their clients. These initiatives may include activities associated with ropes courses, special games that are engineered to provide metaphors for life challenges, or other types of adventure related recreation (e.g., Gass, 1993; Nadler & Luckner, 1992; Rohnke, 1984; Tate, 1994). Among the most important changes that are assumed to result from participation in such activities are increases in self-efficacy, self-affirmation, and the sense of achievement associated with the successful performance of a motor skill.

Self-efficacy is defined as an individual's belief in his or her ability to perform a task required to produce an outcome (Bandura, 1977). Self-efficacy is important in mental health contexts because many clients tend to perceive themselves as incapable of experiencing success in any but the most simple of tasks (Seligman, 1975, 1990). Self-efficacy beliefs are specific to a behavior or set of behaviors in a certain context. Despite the task-specific nature of self-efficacy, it may be generalized to other behaviors or situations depending on the closeness of the relationships among the crucial features and skills (Bandura, 1986; Maddux, 1991). Thus, individuals with high self-efficacy in particular tasks will tend to have more confidence that they can achieve what they set out to accomplish in new domains of related behavior. Although it is assumed that individuals can increase their self-efficacy in many ways (Bandura, 1986), research has shown that successful performance experiences are the most powerful sources of self-efficacy (Bandura, 1977, 1986, 1995; Hackett, Betz, O'Halloran, & Romac, 1990).

In addition to self-efficacy, self-affirmation is another variable that is important in mental health settings. Self-affirmation is an ongoing process of self-definition, validation, enhancement, and maintenance of self-regard

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(Haggard & Williams, 1991, 1992; Steele, 1975, 1988; Tate, 1996). In the course of daily life, individuals encounter a variety of threats to their self-regard. This is particularly true for recipients of mental health services, for whom these threats may become overwhelming. Situations that facilitate positive self-affirmations may help people to cope with these threats by facilitating a state of harmony within one's consciousness (Csikszentmihalyi & Csikszentmihalyi, 1988). People may also cope with a self-threat by affirming another personally meaningful and significant, but unrelated aspect of their lives (Steele, 1975, 1988; Steele & Lui, 1983). An individual who does not do well in school, for example, may believe that he or she is mentally deficient. However, this individual might maintain a sense of personal worth by taking pride in his or her role as a starter on the high school basketball team. This individual's success in basketball affirms the belief that he or she is a competent and worthy person.

A sense of achievement is also important to the treatment of clients in mental health facilities. This sense of achievement may result from successful learning of a motor skill. In mental health settings, two major challenges are faced by therapists who seek to use motor skills to initiate psychological change. One of these challenges is initiating participation and facilitating client engagement in the task. Lack of motivation to participate is characteristic of many patients in mental health facilities. The second challenge is that of encouraging clients to recognize and personally acknowledge their achievements. Many individuals in mental health facilities tend to deny personal credit for successes that they experience and point quickly to their personal inadequacies when they experience failure (e.g., Abramson, Seligman, & Teasdale, 1978; Morris & Ellis, 1993; Seligman, 1990).

One form of training that would lend itself particularly well to meeting these two challenges is adaptive training. In contrast to whole training, which focuses on practicing tasks in their total, completed form (e.g., full speed, full strength, full difficulty), and fixed training, which has a set inflexible progression for the trainee to follow, adaptive training is training in which the problem, the stimulus, or task is varied as a function of how well the trainee performs (Kelly, 1969; Mane, Adams, & Donchin, 1989; Tate 1996). An individual practicing under the full training technique interested in becoming a field goal kicker, for example, would immediately try to kick a 40 yard field goal before learning kicking fundamentals and before being able to successfully make a kick from 15 or 20 yards. If the same person wanted to practice under the fixed training condition, they would take a set number of attempts to make field goals from 10 yards, then 15 yards, then 20 yards, then 25 yards, etc. This progression would happen regardless of the trainee's success rate. Under an adaptive training framework, the field goal kicker mentioned above, would begin practicing at their given skill level and progress to further distances when they had mastered the present distance. These same principles can be applied to use with challenge initiatives.

Adaptive training would also seem to provide opportunities to address the challenge of motivating clients to participate because of its responsiveness to the abilities of the trainee (Kelly, 1969; Lintern & Roscoe, 1980; Patrick, 1992; Tate, 1996). Successful experiences in tasks that are calibrated to the ability levels of participants could be expected to increase self-efficacy, which in turn should promote motivation to participate (Bandura, 1977, 1986, 1989; Maddux & Lewis, 1995; Tate, 1996). Adaptive training would also seem to provide an advantage over whole training and fixed training in helping clients to recognize achievements that they have made. In contrast to whole training, adaptive training leads to multiple opportunities to experience small successes in the process of working toward accomplishing the larger, more complex task. These small successes provide clients with performance accomplishments that are essential to building self-efficacy (Bandura, 1977, 1986, 1995; Maddux, 1991, 1995; Tate & Ellis, in press) ,and they also provide therapists with a greater number of opportunities to reinforce achievements that clients have made. These successful performances may help to enhance clients' sense of confidence, pride,

competence, and satisfaction, all of which may be thought of as components of self-affirmation (Ellis, Voelkl, & Morris, 1994).

Background

Self-Efficacy, Performance and How They Are Related

Over the past few decades, several studies have been conducted to determine the relationship between self-efficacy and performance (for review, see Feltz, 1982; Gould, Weiss, & Weinberg, 1981; Tate, 1996; Woolfolk, Murphy, Gottesfeld, & Aitken, 1985). Successful performance accomplishments are the most powerful sources of self-efficacy (Bandura, 1977,1986), and research has shown that a high level of self-efficacy in a particular task is an excellent predictor of performance within that task (Bandura, 1986; Mahoney, Gabriel, & Perkins, 1987). The research on self-efficacy and performance has been shown to be bi-directional. Self-efficacy is an excellent predictor of performance, and successful performance accomplishments are the most powerful sources of self-efficacy. From this relationship, the conclusion that self-efficacy and performance have a cyclical relationship, can be drawn.

In early research involving self-efficacy and performance, Gould et al. (1981) examined the effect that self-efficacy had on wrestlers' match success. Fifty male collegiate wrestlers competing in the Big Ten Conference Wrestling championship were administered the Psychological Preparation in Wrestling Questionnaire the night before the tournament began. The results revealed that successful wrestlers had significantly more self-efficacy than unsuccessful wrestlers.

Using a simple motor task, putting a golf ball, Woolfolk et al. (1985) wanted to determine if self-efficacy was a good predictor of performance. The researchers asked male college undergraduate students how many putts they could make from six feet. The students were also asked how confident they were of their answer. The duel responses required in this study represent two dimensions of the putters' self-efficacy, strength and level (Bandura, 1977). The results of this study showed that self-efficacy and performance were significantly correlated.

Self-Affirmation

Steele's (1988) theory of self-affirmation addresses the process in which individuals affirm themselves when threats to their self-regard are encountered. Unlike similar concepts such as, self-efficacy and self-esteem, self-affirmation refers to the process in which individuals validate his or her worth (Schlenker, 1984; Steele, 1988; Tate, 1996). Situations that facilitate positive self-affirmations can help people to cope with threats to their self-regard by facilitating a sense of harmony within one's consciousness (Csikszentmihalyi & Csikszentmihalyi, 1988). One way in which people cope with self-threats is by affirming another personally meaningful, but unrelated aspect of their lives (Steele, 1988)

Steele (1975), conducted a study of name calling on compliance. The results of this study showed that individuals exposed to negative name-calling conditions (both relevant and irrelevant) had a significantly higher willingness to cooperate in future community activities than either those who were called positive names or no name. This study follows the framework of the self-affirmation concept. Individuals with threats to their self-regard (i.e., name-calling), want to affirm their goodness and worth (i.e., agreeing to participate in community projects). Individuals want to affirm their goodness and worth with either a related or unrelated, but significant action (Steele, 1975, 1988; Steele & Lui, 1983).

Haggard and Williams (1991, 1992) performed research on identity affirmation through leisure activities. Self-affirmation is characterized by these authors as an ongoing process of continual self-definition, validation, maintenance, and enhancement of the self. These researchers suggested that everything one does is a part of the self-affirmation process. One potent area in the self-affirmation process may be leisure activities (Haggard & Williams, 1991, 1992; Kelly, 1987).

Ellis et al. (1994) performed a study to explain the variance in studies of the flow phenomenon. Self-affirmation was used as one of their variables, because Csikszentmihalyi and Csikszentmihalyi (1988) suggested that flow occurs when the contents of consciousness are in harmony with the goals that define one's self. Self-affirmation was measured in this study by the extent to which each sampled experience was self-affirming to each individual.

Adaptive Training

Adaptive training may be useful in mental health facilities because it helps to motivate clients to participate in activities. The motivation to participate may be facilitated by adaptive training's ability to be responsive to the abilities of each individual client. Adaptive training also helps to facilitate motivation by its tendency to create successful performance accomplishments (Bandura, 1986).

In 1969 *Human Factors* dedicated most of an issue to the application of adaptive training. The most influential and most heavily cited article in adaptive training came from this issue (Kelly, 1969). Kelly defined adaptive training as a training method in which "the problem, the stimulus, or the task is varied as a function of how well the trainee performs" (p. 547). He suggested that learning can only take place when the difficulty of the task is at an appropriate difficulty level. When a task is too easy, a student learns little, and when a task is too hard, a trainee may become discouraged with the task all together. The nature of adaptive training helps in maintaining an optimal level of difficulty.

An advantage of adaptive training is that it keeps measured performance attempts constant (Kelly, 1969; Tate & Ellis, in press). This is done by the training system controlling the difficulty of the task. The constant performance level facilitated by adaptive training could increase participation in the activity. This is because the participant sees him or herself continually succeeding when he or she is improving at the task. Successful performance accomplishments, similar to the ones created by adaptive training, can increase an individual's motivation to participate (Bandura, 1986).

During the mid to late seventies, Williges, Williges, and associates published several research articles on the usefulness of adaptive training with laboratory tracking tasks. Batram (1988) tested adaptive training's utility in a field study for the United States Postal Service. Newly hired desk operators learning how to code foreign destinations of mail needed to be able to encode foreign destination mail in a set amount of time per parcel. The mail passed by the operators on a conveyor belt. The speed of the conveyor belt was adapted in such a manner as to promote the operators' error level to be maintained at less than 1%. The speed of the conveyor was increased when the error percent and coding time per item were in the desired range. These speed fluctuations, being dependent upon the operators' performance level, is an example of adaptive training. The results revealed that 85% of the participants were able to obtain the performance criterion set by the Postal Service.

A recent study conducted by Tate (1996) was the first to apply the theory of adaptive training to the facilitation of challenge initiatives. He compared the effects of three facilitation techniques on adolescent's in mental health facilities self-efficacy, self-affirmation, and performance. The three

facilitation techniques tested were as follows: Adaptive training, whole training (practicing a task in its entirety with each trial), and fixed training (practicing in a set progression giving a set number of practice attempts at each interval). The results of this study revealed that adaptive training was significantly more effective than whole training at enhancing both self-efficacy and self-affirmation in its participants. The adaptive group was also greater than the fixed group for all variables tested. Although the difference was not found to be significant between the adaptive and fixed groups, the author suggested that this could be attributed to the low sample size. The author suggests, that with a larger sample, a significant difference would have been found between the adaptive and fixed groups for both self-efficacy and self-affirmation.

Adaptive Training's Relationship with the other Variables

Performance. Learning is maximized when the difficulty of a task is at an appropriate difficulty level with a student's skill level (Kelly, 1969). When a task is too easy, a student learns little, and when a task is too hard, the student may become discouraged with the task all together. The nature of adaptive training helps maintain an optimal level of difficulty. This optimal difficulty level will help to create successful performances which should increase the students' self-efficacy. Research has shown self-efficacy as an excellent predictor of performance (Gould et al. 1981; Woolfolk et al. 1985). With an increased self-efficacy, the individual should have continual increased performance scores.

Self-Efficacy. The most powerful way to enhance self-efficacy is through repeated successful performance accomplishments (Bandura, 1977, 1986, 1995). Repeated failure at a particular task is the easiest way to deteriorate an individual's self-efficacy. Adaptive training helps to facilitate successful performance accomplishments by maintaining the difficulty level of the task with the skill level of the trainee.

Self-Affirmation. Steele (1988), stated that an individual may cope with a threat to their self-regard by affirming another unrelated but personally meaningful aspect of their life. Depressed individuals in mental health facilities often have a low self-regard and need to find someway to affirm their goodness as a person. Adaptive training facilitates repeated successful performance accomplishments. The successful experiences that the individuals have may facilitate feelings of confidence, pride, satisfaction, and competence which are all part of self-affirmation (Ellis et al. 1994).

Conclusion

Individuals facilitate challenge initiatives in many different ways. With the abundance of existing methods used to lead challenge initiatives, determining the most effective method can often be confusing. According to current counseling theory, an intervention must be structured so that it correlates with a client's readiness for treatment (Corey, 1991). Simply stated, therapists must begin treatment where the client is at. Adaptive training is based on this philosophy. It is structured in a way as to maintain the optimal state of readiness within its clients. Whole training and fixed training, in contrast, have the potential to progress too quickly, moving outside the client's readiness level. Therefore, adaptive training may be the most effective method for enhancing self-efficacy and self-affirmation among adolescents in mental health facilities.

REFERENCES

Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. Journal of Abnormal Psychology, 87, 49-74.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84(2), 191-215.

Bandura, A. (1986). Social foundations of thought and action. New York: Prentice-Hall.

Bandura, A. (1989). Human agency in social cognitive theory. American Psychologist, 44(9), 1175-1184.

Bandura, A. (1995). Exercise of personal and collective efficacy in changing societies. In A. Bandura (Ed.), Self-efficacy in changing societies (pp. 1-45). New York: Cambridge University Press.

Batram, D. (1988). The design and evaluation of a computer-based training system for foreign destination coding desk operators. In J. Patrick, & K. D. Duncan (Eds.), Training, human decision making and control (pp. 13-42). Amsterdam: Elsevier.

Corey, G. (1991). Theory and practice of counseling and psychotherapy. Pacific Grove, CA: Brooks/Cole Publishing Company.

Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (1988). Optimal experience: Psychological studies of flow in consciousness. New York: Cambridge University Press.

Ellis, G. D., Voelkl, J. E., & Morris, C. (1994). Measurement and analysis issues with explanation of variance in daily experience using the flow model. Journal of Leisure Research, 26(4), 337-356.

Feltz, D. L., (1982). Path analysis of the causal elements in Bandura's theory of self-efficacy and an anxiety-based model of avoidance behavior. Journal of Personality and Social Psychology, 42(4), 764-781.

Gass, M. A. (1993). Adventure therapy: Therapeutic applications of adventure programming. Dubuque, IA: Kendall/Hunt Publishing Company.

Gould, D., Weiss, M., & Weinberg, R. (1981). Psychological characteristics of successful and unsuccessful big ten wrestlers. Journal of Sport Psychology, 3(1), 69-81.

Hackett, G., Betz, N. E., O'Halloran, M. S., & Romac, D. S. (1990). Effects of verbal and mathematics task performance on task and career self-efficacy and interest. Journal of Counseling Psychology, 37(2), 169-177.

Haggard, L. M., & Williams, D. R. (1991). Self-Identity benefits of leisure activities. In B. L. Driver, P. J. Brown, & G. L. Peterson (Eds.), Benefits of leisure (pp. 91-102). State College, PA: Venture Publishing, Inc.

Haggard, L. M., & Williams, D. R. (1992). Identity affirmation through leisure activities: Leisure symbols of the self. Journal of Leisure Research, 24, 1-18.

Kelly, C. R. (1969). What is adaptive training? Human Factors, 11, 547-556.

Kelly, J. R. (1987). Freedom to be: A new sociology of leisure. New York: Macmillian Publishing.

Lintern, G., & Roscoe, S. N. (1980). Adaptive perceptual-motor training. In S. N. Roscoe (Ed.), Aviation psychology (pp. 239-250). Ames, IA: Iowa State University Press.

Maddux, J. E. (1991). Self-efficacy. In C. R. Snyder & D. R. Forsyth (Eds.), Handbook of social and clinical psychology (pp. 57-78). New York: Pergamon.

Maddux, J. E. (1995). Self-efficacy theory: An introduction. In J. E. Maddux (Ed.), Self-efficacy, adaptation, and adjustment: Theory, research and application (pp. 3-33). New York: Plenum Press.

Maddux, J. E., & Lewis, J. (1995) Self-efficacy and adjustment: Basic principles and issues. In J. E. Maddux (Ed.), Self-efficacy, adaptation, and adjustment: Theory, research and application (pp. 37-68). New York: Plenum Press.

Mahoney, M. J., Gabriel, T. J., & Perkins, T. S. (1987). Psychological skills and exceptional athletic performance. The Sport Psychologist, 1, 181-199.

Mane, A. M., Adams, J. A., & Donchin, E. (1989). Adaptive and part-whole training in the acquisition of a complex perceptual-motor skill. Acta Psychologica, 71, 179-196.

Morris, C., & Ellis, G. (1993). The attributional basis of perceived freedom in leisure. Therapeutic Recreation Journal, 27(3), 172-185.

Nadler, R. S., & Luckner, L. L. (1992). Processing the adventure experience: Theory and practice. Dubuque, IA: Kendall/Hunt Publishing Company.

Patrick, J. (1992). Training: Research & practice. San Diego, CA: Academic Press.

Rohnke, K. (1984). Silver bullets: A guide to initiative problems, adventure games, stunts, and trust activities. Beverly, MA: Wilks-Craft Creative Printing.

Schlenker, B. R. (1984). Identities, identification, and relationships. In V. Derlaga (Ed.), Communication, intimacy and close relationships (pp. 71-104). New York: Academia Press.

Seligman, M. E. P. (1975). Helplessness: On depression, development, and death. San Francisco, CA: W. H. Freeman and Company.

Seligman, M. E. P. (1990). Learned optimism. New York: Alfred A. Knopf.

Steele, C. M. (1975). Name-calling and compliance. Journal of Personality and Social Psychology, 31, 361-369.

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), Advances in experimental social psychology, volume 21: Social psychological studies of the self: Perspectives and programs (pp. 261-302). San Diego, CA: Academic Press, Inc.

Steele, C. M., & Lui, T. J. (1983). Dissonance process as self-affirmation. Journal of Personality and Social Psychology, 45, 5-19.

Tate, D. W. (1994). IN ARMS: An adventure-based counseling model. In Current Trends and Issues in Parks and Recreation Proceedings (pp. 41-49). Salt Lake City, UT: University of Utah Department of Recreation and Leisure.

Tate, D. W. (1996). Effect of three faciltation techniques on self-efficacy, self-affirmation, performance, and meaning of a challenge initiative among adolescents in mental health facilities. Salt Lake City, UT: University of Utah.

Tate, D. W., & Ellis, G. D. (In press). Effects of facilitation techniques on challenge initiative related outcomes among adolescents receiveing mental health services.

Woolfolk, R. L., Murphy, S. M., Gottesfeld, D., & Aitken, D. (1985). Effects of mental rehearsal of task motor activity and mental depiction of task outcome on motor skill performance. Journal of Sport Psychology, 7, 191-197.